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ABSTRACT

In 1979, a study was conducted at Palomar College (PC) to measure student reading levels; to determine textbook readability in humanities, science, and vocational education courses; and to make recommendations for adjusting the curriculum and/or screening procedures in order to facilitate increased student success in reading technical content-area material. A total of 110 texts were evaluated using the Fry Readability Formula to obtain mean textbook readability grade equivalents for individual disciplines as well as average text readability levels for entire divisions. Student reading ability was assessed for a stratified sample of 1,027 students using the Nelson-Denny Form A Reading Test. The study found the overall average of textbook readability to be at the college sophomore level; however, there was a range of approximately 5.7 grade levels among the various disciplines. Five of the 17 disciplines examined used texts that averaged at the 13th or 14th grade level. Of the students tested, 65.8% read at or above the 12th grade level and 24.2% tested between the 7th and 10th grade levels. Students aged 18 to 21 scored significantly lower than those aged 22 to 50. The highest reading levels were found in students from the letters, engineering, and psychology departments, with the majority reading at or above the 13th and 14th grade levels. The lowest reading levels were found in vocational programs, with a majority of students reading below the 13th grade level. (KL)

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STUDENT READING ABILITY VS TEXTBOOK READABILITY AT PALOMAR COLLEGE

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Abstract

The following article deals with a study conducted on the relationship between student reading ability and the level of textbook readability at Palomar College, San Marcos, California. The study was designed with three objectives in mind:

1. to determine the readability level of textbooks in the various disciplines,
2. to measure student reading ability,
3. to make recommendations for increasing student success in reading technical content-area material.

STUDENT READING ABILITY

VS

TEXTBOOK READABILITY

AT PALOMAR COLLEGE

Students entering college are generally expected to read at a level required to understand the material assigned by instructors in the content areas. However, research indicated a significant discrepancy between the level of difficulty in college texts and average student ability to assimilate printed material (McDougall, 1977). In light of this concern, the College Reading Program recently completed an eighteen month study of student reading ability and textbook readability in various disciplines throughout the college.

OBJECTIVES

The survey was designed with three objectives in mind. First, textbook level of difficulty was to be determined using a reasonably accurate readability formula. The Fry Readability Formula was chosen because of its proven level of accuracy and ease of administration (Fry, 1968; Gielland, 1972).

Second, the average level of student reading ability was to be measured through standardized group testing of a significant percentage of Palomar students. The Nelson Denny Test was chosen as the testing tool due to its reliability and validity (Harris & Sipay, 1975).

Third, the distribution of student reading abilities was to be compared with assessments of text difficulty in each discipline. Based on this information, recommendations for adjustments in curriculum and/or screening procedures were to be developed to facilitate increased student success in reading college level material.

EXPERIMENTAL DESIGN

Beginning in April of 1979, each department and program on campus was requested to submit their most frequently used textbooks for review. The Fry Readability Formula was used to evaluate the texts. This formula studies the number of sentences and unfamiliar terminology within several one hundred word passages to determine readability level of each individual text. An average readability level would be determined for each division, as well as individual disciplines within each division.

In conjunction with the Research Office a survey method was devised to determine student reading ability. Preliminary discussions eliminated soliciting the participation of a random sample of Palomar College students because it was felt that a positive bias in reading abilities would result as able readers would be more likely to volunteer for examination than less able students. A stratified sample, based upon detailed study of the second census week for the Fall 1979 semester, was used in generating the number of class sections necessary to obtain representative results of the entire college population. A three percent sample was selected as large enough to produce a reasonably accurate overall result.

The Nelson Denny Form A Reading Test was used as the diagnostic tool. This test is nationally normed and designed to measure high school and college level students' reading ability (Bertalan, 1976; Cline, 1971). It has been validated in numerous studies and has shown significant correlations with college grades, class ranks and subject matter grades.

IMPLEMENTATION

During the months of April 1979 through October 19, 1979 a total of 110 texts were evaluated by the program. Results were obtained in mean textbook readability grade equivalents for individual disciplines, as well as average readability levels for entire divisions.

Student testing, conducted by instructors in the Reading Program, commenced on March 19, 1980. A total of 1,027 students were tested from fifty day and evening class sections. Thirty-one day sections and nineteen extended day or continuing education sections were included under this plan. During the administration of the tests, data was requested defining student age group, sex, educational background including high school completion and semesters of post secondary education completed. Unfortunately the classroom testing did not commence until the semester was six weeks old. A certain percentage of students experiencing reading difficulty in various content areas had already dropped the class or did not appear for testing on the assigned testing day.

RESULTS - THE READABILITY SURVEY

The Readability Survey evaluated 110 textbooks in the areas of Humanities, Sciences, and Vocational Education. Individual disciplines within each division submitted two or three of the most widely used texts in their areas. The Humanities (including such disciplines as Psychology, Social Services, Arts and Letters) averaged in textbook difficulty at the upper graduate college level. Mean textbook readability levels ranged from college to graduate level in Psychology.

The Sciences (including disciplines such as Biology and Physical Science, Mathematics, Engineering) averaged textbook levels in mid-college range, the lowest in Mathematics and the highest in Physical Sciences.

A wide range was found in the division of Vocational Education. This division (including such areas as Business, Educational Occupations, Industrial Tech, etc.) exhibited an average readability at beginning college level. However, more significant than the overall average is the spread of mean textbook readability levels per discipline with Industrial Technology and Apprenticeship the lowest and Public Affairs the highest.

It should be noted that the overall average of textbook readability at Palomar is at the college sophomore grade level. However, range is significant as there is a spread of approximately 5.7 grade levels between various disciplines.

RESULTS - THE SURVEY OF STUDENT READING ABILITY

The survey results were evaluated by age, sex, language proficiency, years in school and grades/units of college credit completed, and by individual discipline. Three grade level percentiles were chosen to determine the need for corrective instruction (7-10th grades), developmental instruction (11-12 grades) and achievement at grade level (13-14) (Dechand, 1973).

Results of the survey indicated that students aged 18 to 21 scored significantly lower than students aged 22 to 50.

Comparison by sex shows that female students tested were slightly higher than males with a smaller percentage requiring corrective instruction.

High school graduates faired slightly better than non-graduates. More significant was the distribution by number of college units completed. Incoming freshmen having completed less than six units scored well below the 13th to 14th grade level, while the majority of second year students read at grade level.

Results by discipline indicate that the highest reading levels were found in students from the Letters, Engineering, and Psychology departments with the majority at or above grade level. The lowest reading levels were in Vocational Education with a majority of students scoring under grade level.

CONCLUSIONS AND RECOMMENDATIONS

It is evident from the readability survey that the average text in use at the College is significantly above grade level. In fact, only five out of seventeen disciplines examined used texts that averaged at grade level. This would indicate that, due to the strong correlation between readability level of texts and student

level of reading ability (Hagstrom, 1971), the average student must be reading at the 12th grade level or above to successfully assimilate printed material assigned by instructors.

Only 65.8% of all students tested read at or above the 12th grade level. A significant portion (24.2) tested between the 7th to 10th grade levels, indicating a probable need for corrective instruction. This is especially true for students between the ages of 18 to 21 who have completed less than twenty-five college credits.

Based upon the survey results, the Reading Program offered the following recommendations to facilitate student success in content area classes.

1. A screening of reading ability should be conducted for all incoming freshmen. Those reading at or below the 10th grade level should be referred to the Reading Program for corrective instruction.
2. Extensive in-service should be provided for all content area instructors on such topics as specialized vocabulary development, surveying and previewing techniques, the creation of study guides and structured study retention systems like SQ3R, etc.
3. Expansion of the existing Reading Program, both in facilities and staff, should be initiated as soon as possible to meet increasing student needs.
4. A strong bridging program in reading between local high schools and Palomar College should be created with the goal of increasing incoming freshmen reading abilities.
5. Further analysis should be done to compare student reading ability to academic achievement and projected success in acquiring an A.A. degree, transfer programs, vocational course certificates, etc.

Reference Notes

1. McDougall, Alan, Dean of Research. "The Relationship Between Reading Competency and Successful Performance in the Curriculum." Southwestern College Research, Report, August 1977.

2. Fry, Edward. "A Readability Formula that Saves Time." Journal of Reading 11, 1968. 575-578

   Gielilland, J. Readability. London: Hodder & Stoughton Publishing, 1972.

3. Harris, A. J.; and Sipay, E. R. "Assessing Reading Performance I." How to Increase Reading Ability. 6th Edition. New York: David McKay Co. Inc., 1975. 188-190

4. Bertalan, John "A Comparison of the Readability of Community College Social Science Textbooks with Student Reading Levels and the Effect on Academic Achievement." ERIC Document Reproduction Service, 1976.

   Cline, Terry. "A Comparison of the Readability of Community College Textbooks with the Reading Ability of the Students Who Use Them." ERIC Document Reproduction Service, 1971.

5. Dechant, E. Reading Improvement in the Secondary School Englewood Cliffs, N. J.: Prentice Hall, Inc., 1973.

6. Hagstrom, John M. "A Comparison of the Reading Abilities of a Junior College Population and the Readability Level of Their Texts." ERIC Document Reproduction Service, 1971.

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